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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,808

04/30/2007

Howard Matthew Colquhoun

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EXAMINER

THOMAS, JAISON P

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

01/21/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,808	Applicant(s) COLQUHOUN ET AL.	
	Examiner Jaison P. Thomas	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to amendments filed on 9/26/2008.
2. Claims 1-3 and 6-16 stand rejected under 35 USC 103(a) as being unpatentable over McGrath et al. (WO 02/25764).
3. Claims 1-8,13 and 14 stand rejected under 35 USC 103(a) as unpatentable over Rose (EP 0008894).
4. Claims 1-10 and 13-16 stand rejected under 35 USC 103(a) as being unpatentable over Shinoda et al. (US Patent App. Pub. No. 2002/0187377).

Response to Arguments

5. Applicant's arguments filed 9/26/2008 have been fully considered but they are not persuasive.

Applicants' contend that the McGrath and Rose references do not teach an "alternating" structure polymer wherein 80 % or more of the polymer is comprised of the spacer and ion-conducting regions. Applicants contend that the polymers illustrated in McGrath and Rose are "random" copolymers wherein "the sulphonated sections and unsulphonated sections are randomly arranged and several sulphonated sections may be adjacent to each other; likewise, several unsulphonated sections may be adjacent to each other." The Applicants conclude that the prior art structures do not teach a polymer that has a sulphonated section followed immediately by an unsulphonated section as required by instant Claim 1. The Applicants have cited a section of the instant specification attempting to clarify the differences between a statistical copolymer and the alternating copolymer apparently described in the instant claims.

The Examiner respectfully disagrees with Applicants interpretation of the scope of Claim 1. While the Examiner agrees that the prior art could teach copolymers wherein several of the sulphonated sections are attached together or several unsulphonated sections are attached together, this still falls within the scope of the claim i.e. instant claim 1 only requires that the ion-conducting section of the polymer having one **or more** sulphonated aromatic groups and four **or more** sulphonated aromatic groups alternating with each other. The claims do not put an **upper** limit on the number of sulphonated aromatic groups in the ion-conducting region of the polymer nor on the number of unsulphonated aromatic groups in spacer group region of the copolymer thus as long as the prior art copolymer has a section which has one **or more** sulphonated aromatic groups in conjunction with a section that has four **or more** unsulphonated aromatic groups the Examiner concludes that said prior art would meet the instantly claimed limitations i.e. the section of the prior art polymer that contains several sulphonated sections could be identified as the ion-conducting portion of the copolymer and the section that contains several unsulphonated groups can be construed as the spacer group region of the polymer resulting in an alternating structure. With respect to cited sections of the specification, the Examiner concludes that the scope of the current claim moves beyond the discussion in the specification and the Examiner declines to read any limitations drawn from the specification into the interpretation of the claims.

With respect to the Shinoda reference, the Applicants again contend that the alternating structure as interpreted by Applicants is not specifically disclosed by

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Shinoda. Applicants cite Exs. 1,4 and 5 of the Shinoda reference which apparently teach copolymers that Applicants contend have no ion conducting regions in the polymer.

The Examiner respectfully disagrees with Applicants in regards to the claim interpretations of the alternating structure for the reasons that are stated above. Further, the Examiner noted in the Office Action the polymer Formula (1) on pg. 1, para. 0007-0008 which discloses a polymer electrolyte structure wherein Ar^1 and Ar^2 are disclosed in para. 0014 as various divalent aromatic groups, R^1 is further defined as being a sulfonic acid group (which the Examiner construes as ion-conducting) or a hydrogen group (pg. 1, para., 0015) and Y is defined to be either electron withdrawing or electron donating functionalities. (pg. 2, para. 0015) The resulting structure of Formula (1), dependent upon the divalent aromatic groups selected, could yield a polymer having at least one phenylene with a sulfonic acid group and a 4-phenylene segment having no ion conducting groups as required by Claim 1.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison P. Thomas whose telephone number is (571) 272-8917. The examiner can normally be reached on Mon-Fri 9:30 am to 6:00 pm.

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. P. T./
Examiner, Art Unit 1796

/DOUGLAS MC GINTY/
Primary Examiner, Art Unit 1796